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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,792	10/20/2003	Larry Neil Lewis	132913-1	7574

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER	
THOMPSON, CAMIE S	

ART UNIT	PAPER NUMBER
1774	

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/689,792	LEWIS ET AL.	
	Examiner	Art Unit	
	Camie S. Thompson	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Amendment filed June 6, 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-110* is/are pending in the application.

4a) Of the above claim(s) *29-50 and 81-110* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,14,16-28,51-62,64,65 and 67-80* is/are rejected.

7)☒ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed June 9, 2006 are acknowledged.

2. Examiner acknowledges amended claims 1, 2, 14, 28, 51 and 80.

3. Examiner acknowledges cancelled claims 13, 15, 63 and 66.

4. Claims 29-50 and 81-110 stand withdrawn.

5. The objection to the specification is withdrawn due to applicant's submission of a new abstract.

6. The rejection of claims 1-12, 17-28, 51-62, 64-65 and 68-80 under 35 U.S.C. 112, second paragraph is overcome by applicant's amended claims.

7. The rejection of claims 1-2, 4-8, 20-25, 28, 51-52, 54-58 and 71-80 under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al., U.S. Pre Grant Publication 2003/0227021 is withdrawn due to applicant's argument.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

9. Claims 16 and 67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 16 and 67 are rendered indefinite because they are dependent from cancelled.

Claims 16 and 67 recite the limitation "continuous" in line 2. There is insufficient antecedent basis for this limitation in the claim. The other claims are directed to a discontinuous layer. The term "substantially" in claims 16 and 67 is a relative term, which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-8, 14, 16-18, 20-22, 24-25, 27-28, 51-58, 64-65, 67-69, 71-76 and 78-80 are rejected under 35 U.S.C. 102(b) as being anticipated by Hosokawa et al., U.S. Patent Number 6,284,393.

Hosokawa discloses an organic electroluminescent devices comprising a positive electrode, a negative electrode supported on a substrate and an organic layer including an organic light-emitting layer as sandwiched between the two electrodes wherein the positive and negative

electrode can be gold, platinum, nickel, palladium, indium zinc oxide, ZnO-Al, Zn-Sn-O, Au/In-Zn-O, PT/In-Zn-O. Additionally, the reference discloses that substrate can be plastic. Example 4 of the reference discloses organic electroluminescent devices discloses an ITO-covered glass substrate wherein CuPc layer is deposited onto the substrate at a thickness of 25 nm, a TPD layer was then deposited at a thickness of 25 nm and an Alq layer (electro-active layer) was then deposited at a thickness of 60 nm. The example also discloses an aluminum-lithium alloy, which is island-like discontinuous, was also deposited at a thickness of 2nm. Example 4 of the reference discloses two metal-containing layers. Column 13, lines 44-53 of the reference discloses that the thin metal film can be platinum or gold. The drawings are described in the reference as having a black absorption layer. The reference also discloses that the electrodes can be conductive oxides such as In-Zn-O. Instant claim 79 has process limitations that are not given any patentable weight.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 9-12, 23, 59-62 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosokowa et al., U.S. Patent Number 6,284,393.

Hosokawa discloses an organic electroluminescent devices comprising a positive electrode, a negative electrode supported on a substrate and an organic layer including an organic light-

emitting layer as sandwiched between the two electrodes wherein the positive and negative electrode can be gold, platinum, nickel, palladium, indium zinc oxide, ZnO-Al, Zn-Sn-O, Au/In-Zn-O, PT/In-Zn-O. Example 4 of the reference discloses organic electroluminescent devices discloses an ITO-covered glass substrate wherein CuPc layer is deposited onto the substrate at a thickness of 25 nm, a TPD layer was then deposited at a thickness of 25 nm and an Alq layer (electro-active layer) was then deposited at a thickness of 60 nm. The example also discloses an aluminum-lithium alloy, which is island-like discontinuous, was also deposited at a thickness of 2nm. Example 4 of the reference discloses two metal-containing layers. The reference does not disclose that the substrate is polycarbonate, polyolefin, polyester, a polyimide or a polysulfone or an acrylate. However, the reference discloses that the substrate can be made of plastic. A plastic is generic and encompasses a polyester, polycarbonate or polyolefin. Therefore, it would have been obvious to one of ordinary skill in the art to have the substrate be made of polycarbonate, polyolefin, polyimide or polyester since the generic plastic encompasses these materials. Hosokawa does not specifically disclose that the discontinuous layer has a mean diameter of less than the wavelength of ultraviolet light, visible light, near infrared light and infrared light. However, this is an optimizable feature. The reference discloses that the electron injection electrode layer has a light transmittance of not smaller than 50% having a wavelength of from 380 to 700 nm. The mean diameter affects the light that passes adjacent to the electron injection electrode layer. Therefore, it would have been obvious to one of ordinary skill in the art to have a mean diameter of less than the wavelength of ultraviolet light, visible light, near infrared light and infrared light in order to have a device with high luminescent efficiency and good durability wherein light emission can be taken out through the side of the negative electrode.

14. Claims 1, 19, 51 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosokawa et al., U.S. Patent Number 6,284,393 in view of Sakai et al., U.S. Patent Number 4,824,488.

Hosokawa discloses an organic electroluminescent devices comprising a positive electrode, a negative electrode supported on a substrate and an organic layer including an organic light-emitting layer as sandwiched between the two electrodes wherein the positive and negative electrode can be gold, platinum, nickel, palladium, indium zinc oxide, ZnO-Al, Zn-Sn-O, Au/In-Zn-O, PT/In-Zn-O. Example 4 of the reference discloses organic electroluminescent devices discloses an ITO-covered glass substrate wherein CuPc layer is deposited onto the substrate at a thickness of 25 nm, a TPD layer was then deposited at a thickness of 25 nm and an Alq layer (electro-active layer) was then deposited at a thickness of 60 nm. The example also discloses an aluminum-lithium alloy, which is island-like discontinuous, was also deposited at a thickness of 2nm. Example 4 of the reference discloses two metal-containing layers. Hosokowa does not disclose that the electro-active is a photovoltaic cell. Sakai discloses a photovoltaic device wherein the metal electrode film can be patterned to form island regions (see Figure 4 and column 10, lines 19-39). Island regions prevent accidental short-circuits. Therefore, it would have been obvious to one of ordinary skill in the art to have the discontinuous electro-active metal layer in photovoltaic device in order to prevent short-circuits in a photovoltaic device.

15. Claims 1, 22-23, 51 and 73-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosokawa et al., U.S. Patent Number 6,284,393 in view of Swirbel et al., U.S. Patent Number 5,,460,922.

Hosokawa discloses an organic electroluminescent devices comprising a positive electrode, a negative electrode supported on a substrate and an organic layer including an organic light-emitting layer as sandwiched between the two electrodes wherein the positive and negative electrode can be gold, platinum, nickel, palladium, indium zinc oxide, ZnO-Al, Zn-Sn-O, Au/In-Zn-O, PT/In-Zn-O. Example 4 of the reference discloses organic electroluminescent devices discloses an ITO-covered glass substrate wherein CuPc layer is deposited onto the substrate at a thickness of 25 nm, a TPD layer was then deposited at a thickness of 25 nm and an Alq layer (electro-active layer) was then deposited at a thickness of 60 nm. The example also discloses an aluminum-lithium alloy, which is island-like discontinuous, was also deposited at a thickness of 2nm. Example 4 of the reference discloses two metal-containing layers. The Hosokawa reference does not disclose the specific plastic substrate. Swirbel discloses a method of forming electrode patterns on a substrate that can be used in electroluminescent displays (see column 1, lines 15-19). Figures 4 and 5 of the Swirbel reference discloses a discontinuous metal layer formed on the substrate wherein the substrate can polyester or polycarbonate (see column 2, lines 30-49). Plastics are used as substrate to provide flexibility. Therefore, it would have been obvious to one of ordinary skill in the art to have polyester or polycarbonate as the substrates in the Hosokawa reference in order to have a flexible electroluminescent display.

Response to Arguments

16. Applicant's arguments with respect to the instant claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RENA DYE
SUPERVISORY PATENT EXAMINER
A.U. 1774 9/15/06